



- High accuracy
- Dual (1 ... 50 kN) or triple (100 ... 500 kN) bridge
- Tension / Compression
- Made of high-grade stainless steel
- Low profile
- Application:
  - Industry
  - Testing machines
  - Laboratory

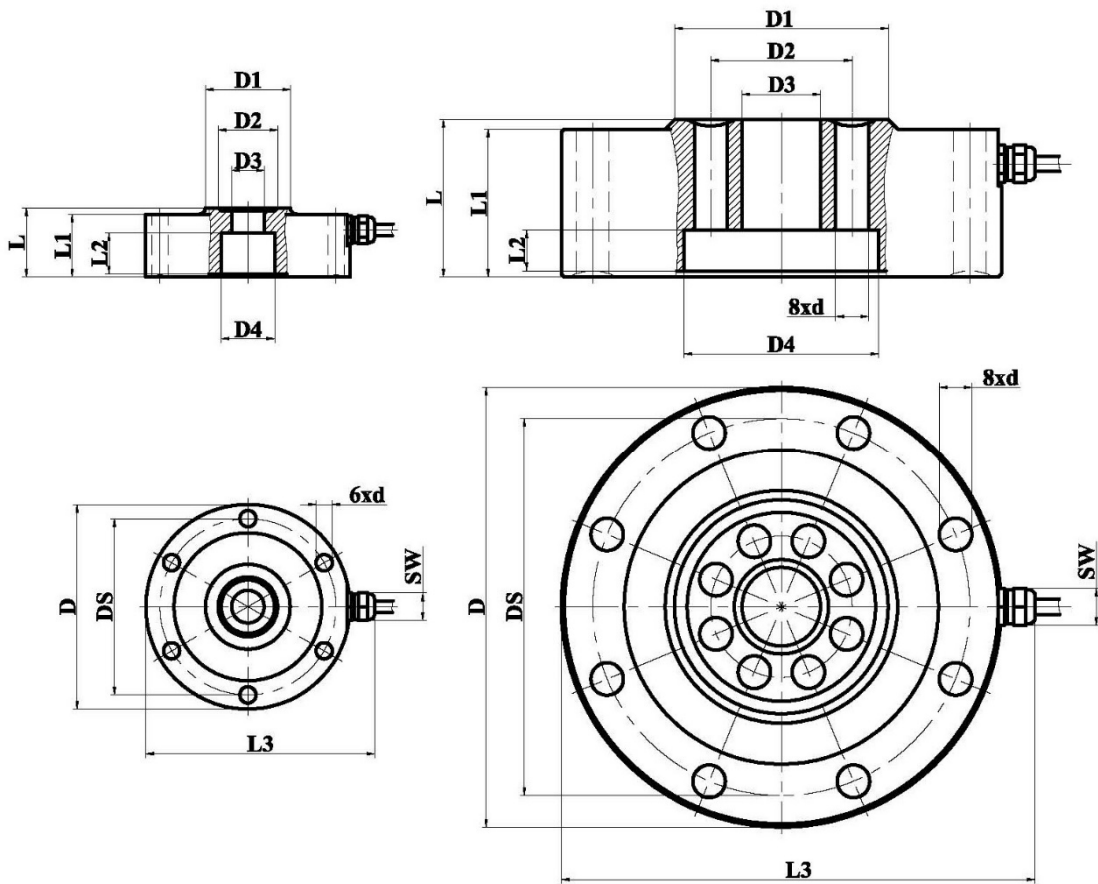
### Specifications

Rated capacity (F <sub>n</sub> )	1, 2, 5	10, 20, 50	100, 200, 500	kN
Overload				
- Safe	130			% F <sub>n</sub>
- Ultimate	150			% F <sub>n</sub>
- Permanent static load <sup>1</sup>	75			% F <sub>n</sub>
- Dynamic load <sup>1</sup>	50			% F <sub>n</sub>
Sensitivity (C <sub>fn</sub> )	1.47 ... 1.53 (C <sub>n</sub> = 1.5)			mV/V
Zero balance (C <sub>0</sub> )	± 0.03			mV/V
Max error				
- Non-linearity	0.2	0.3	0.4	% F.S.
- Hysteresis	0.2	0.3	0.4	% F.S.
- Creep (30 min)	0.1	0.1	0.1	% F.S.
Temperature effect				
- On zero	0.05			% F.S./10 °C
- On output	0.05			% F.S./10 °C
Bridge resistance				
- Input	725 ± 20		1075 ± 20	Ω
- Output	700 ± 10		1050 ± 10	Ω
Insulation Impedance	> 5000			MΩ
Excitation <sup>2</sup>				
- Recommended	7 ... 10			V
- Maximal	15			V
Temperature range				
- Compensated	0 ... + 50			°C
- Operating	- 10 ... + 70			°C
Protection	IP54			
Cable				
- Type	LiFYDY 4 x 0.05	LiYCY 4 x 0.14		
- Length	2	2		m

Notes:

- 1 Recommended value
- 2 DC or AC Voltage

## Outline dimensions, standard version

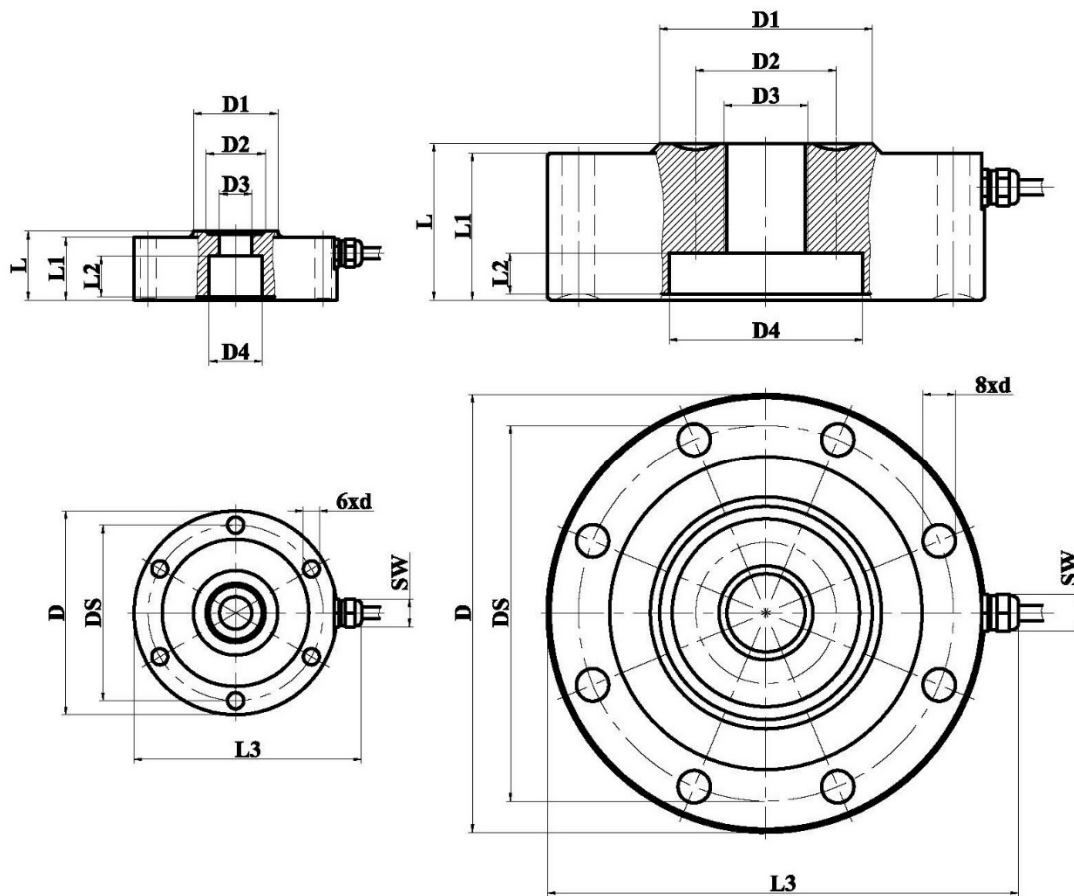


**1, 2, 5, 10, 20, 50 kN**

**100, 200, 500 kN**

F <sub>n</sub> (kN)	Dimensions in mm													
	D	DS	D1	D2	D3	D4	d	L	L1	L2	L3	SW	Mass kg	Deflection @ F <sub>n</sub> (μm)
1	50	42	22	16	8.4	14	4.2	18	17	11	56	Φ4	0.2	40
2	50	42	22	16	8.4	14	4.2	18	17	11	56	Φ4	0.2	40
5	50	42	22	16	8.4	14	4.2	18	17	11	56	Φ4	0.2	40
10	65	56	27	19	10.4	17	5.2	22	20	13	73	11	0.4	60
20	80	68	37	24	14.4	22	6.3	30	28	18	88	11	0.8	60
50	100	85	50	33	20.4	31	8.4	40	38	25	108	11	1.7	60
100	140	120	68	45	25	62	10.4	50	47	13	152	16	4.0	120
200	200	170	108	70	35	92	14.4	60	57	18	212	16	10.0	120
500	260	220	148	95	52	126	20.4	80	77	25	272	16	22.0	120

## Outline dimensions, version with central thread

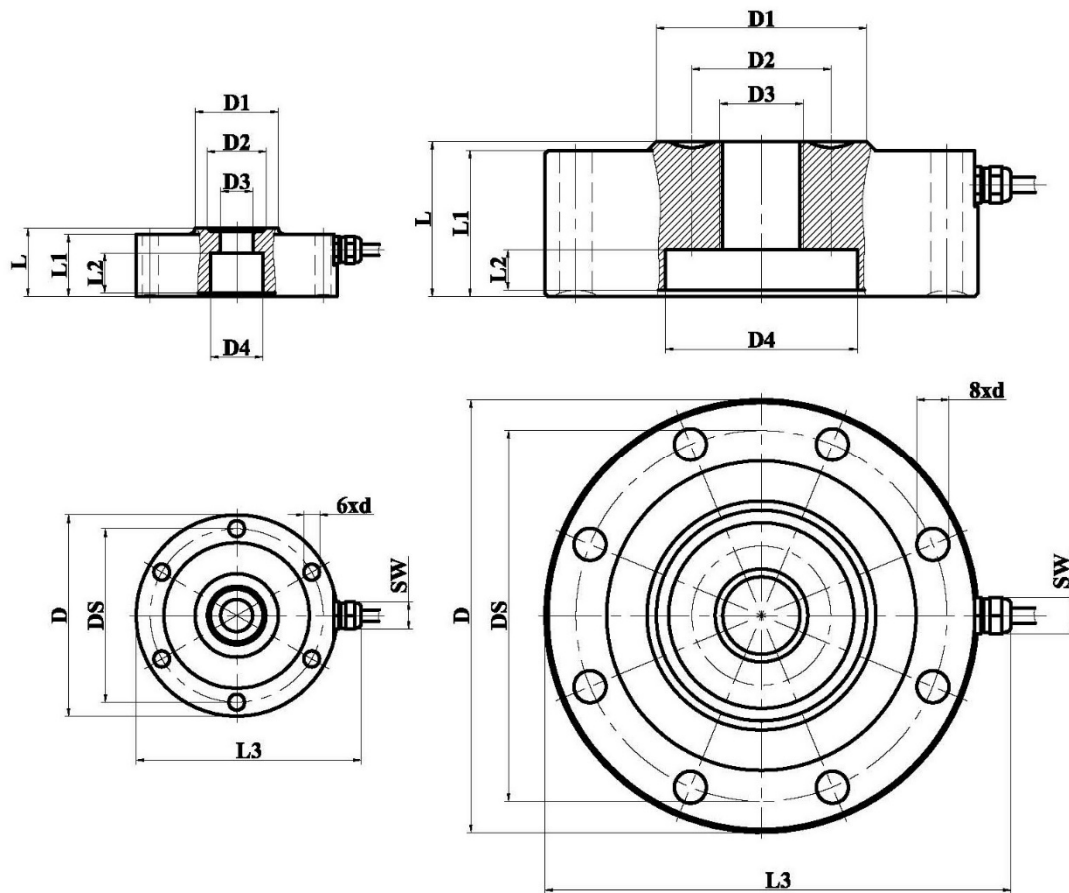


1, 2, 5, 10, 20, 50 kN

100, 200, 500 kN

F <sub>n</sub> (kN)	Dimensions in mm													
	D	DS	D1	D2	D3	D4	d	L	L1	L2	L3	SW	Mass kg	Deflection @ F <sub>n</sub> (μm)
1	50	42	22	16	M8	14	4.2	18	17	11	56	Φ4	0.2	40
2	50	42	22	16	M8	14	4.2	18	17	11	56	Φ4	0.2	40
5	50	42	22	16	M8	14	4.2	18	17	11	56	Φ4	0.2	40
10	65	56	27	19	M10	17	5.2	22	20	13	73	11	0.4	60
20	80	68	37	24	M14	22	6.3	30	28	18	88	11	0.8	60
50	100	85	50	33	M20	31	8.4	40	38	25	108	11	1.7	60
100	140	120	68	45	M30	62	10.4	50	47	13	152	16	4.0	120
200	200	170	108	70	M42	92	14.4	60	57	18	212	16	10.0	120
500	260	220	148	95	M60	126	20.4	80	77	25	272	16	22.0	120

## Outline dimensions, version with central and circumferential thread

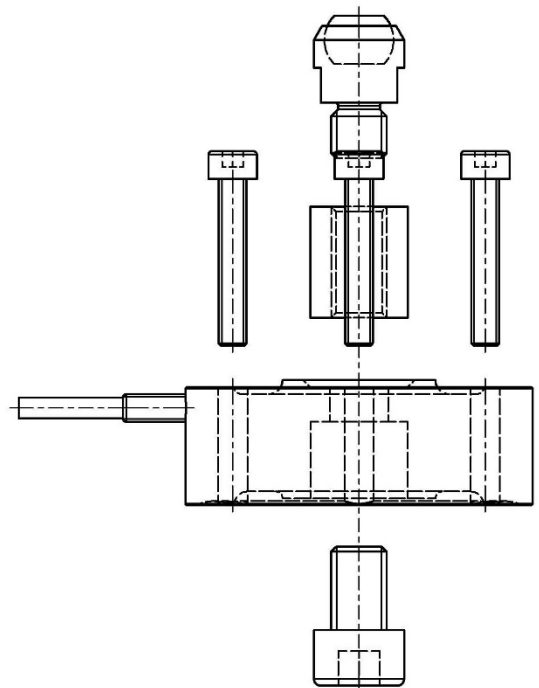
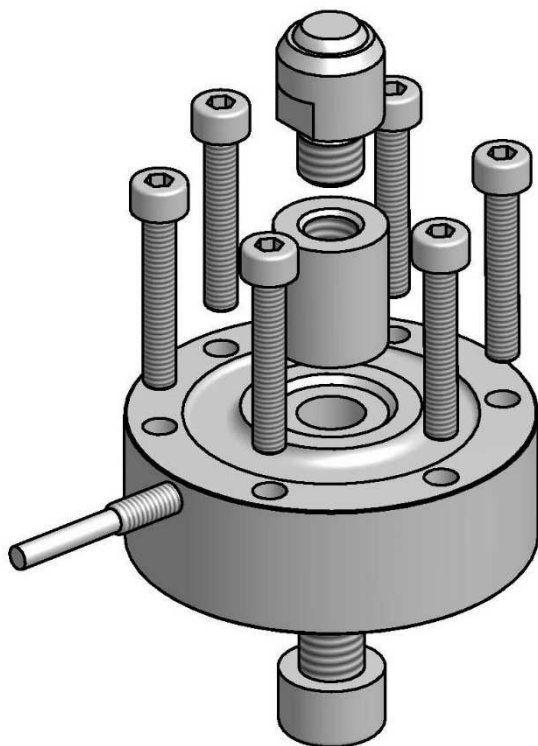
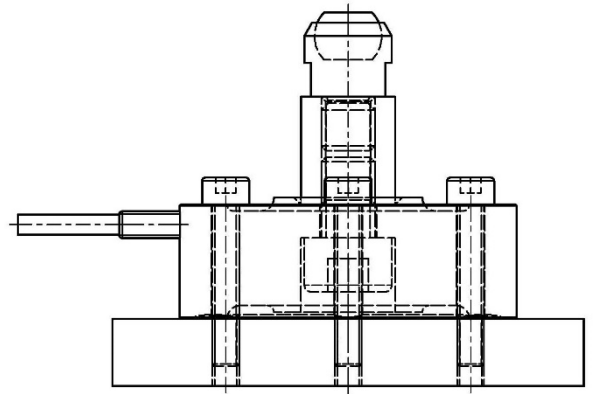
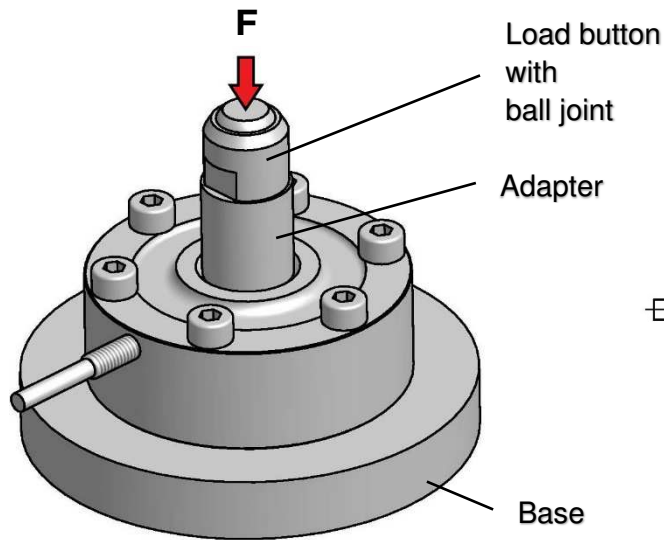


1, 2, 5, 10, 20, 50 kN

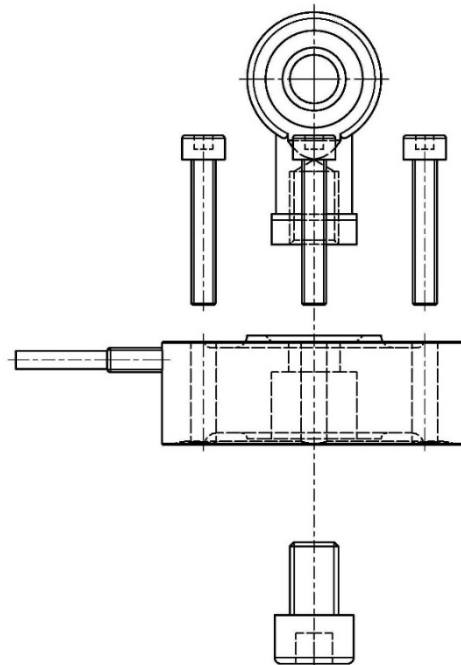
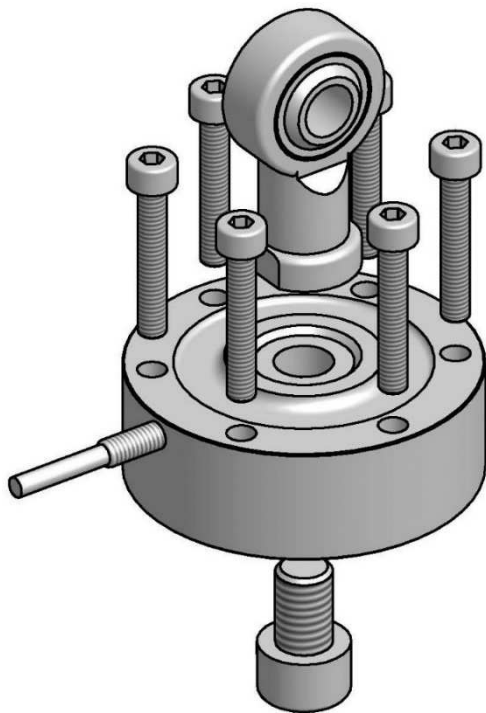
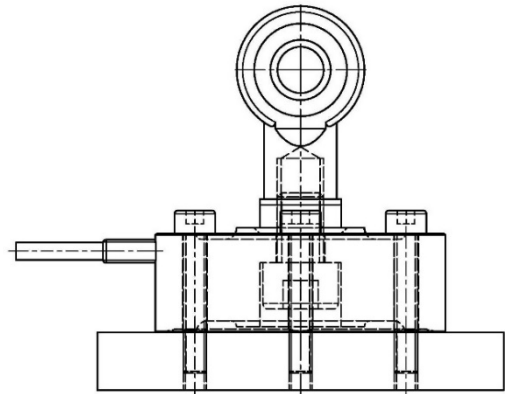
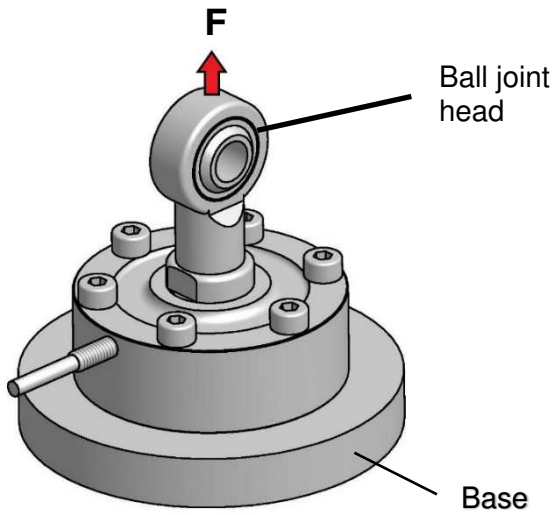
100, 200, 500 kN

F <sub>n</sub> (kN)	Dimensions in mm													
	D	DS	D1	D2	D3	D4	d	L	L1	L2	L3	SW	Mass kg	Deflection @ F <sub>n</sub> (μm)
1	50	42	22	16	M8	14	M4	18	17	11	56	Φ4	0.2	40
2	50	42	22	16	M8	14	M4	18	17	11	56	Φ4	0.2	40
5	50	42	22	16	M8	14	M4	18	17	11	56	Φ4	0.2	40
10	65	56	27	19	M10	17	M5	22	20	13	73	11	0.4	60
20	80	68	37	24	M14	22	M6	30	28	18	88	11	0.8	60
50	100	85	50	33	M20	31	M8	40	38	25	108	11	1.7	60
100	140	120	68	45	M30	62	M10	50	47	13	152	16	4.0	120
200	200	170	108	70	M42	92	M14	60	57	18	212	16	10.0	120
500	260	220	148	95	M60	126	M20	80	77	25	272	16	22.0	120

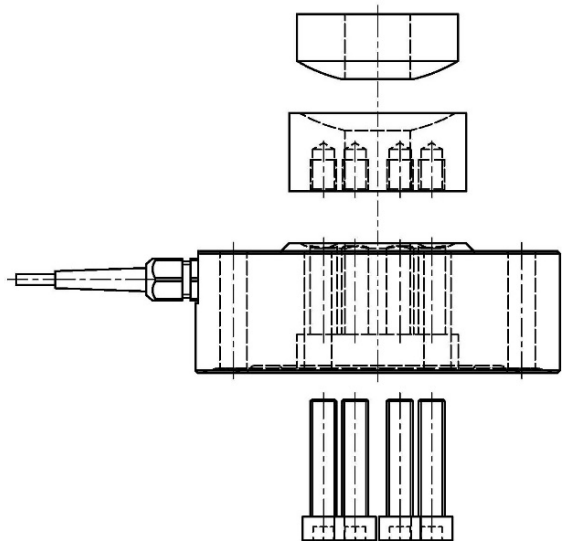
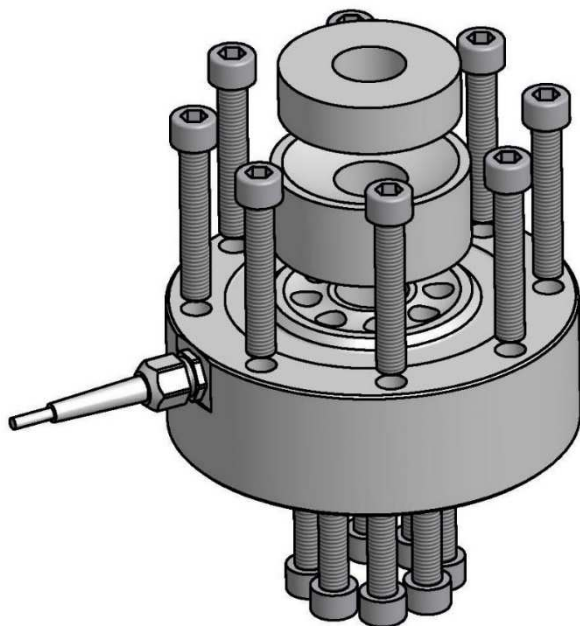
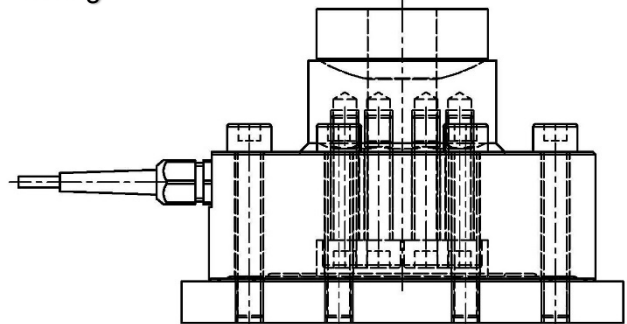
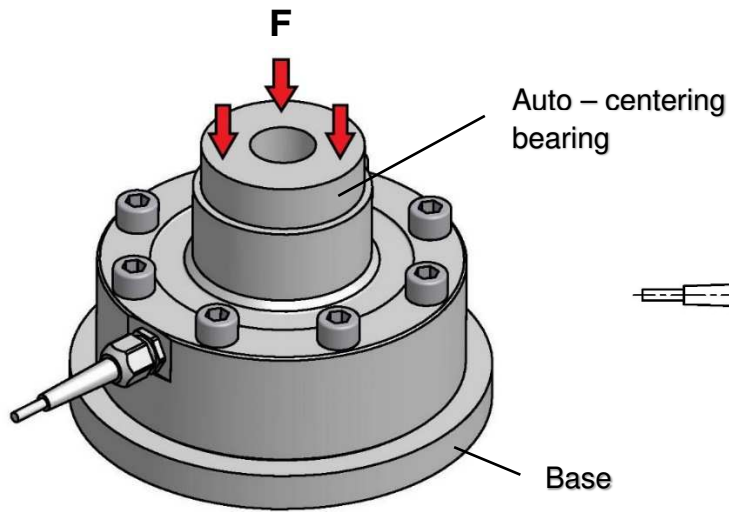
**Recommended load transmission, direction COMPRESSION,  
Range 1, 2, 5, 10, 20, 50 kN**



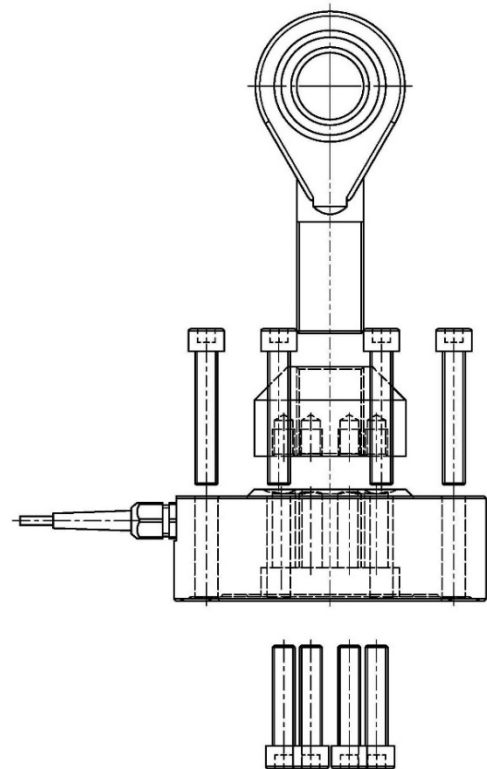
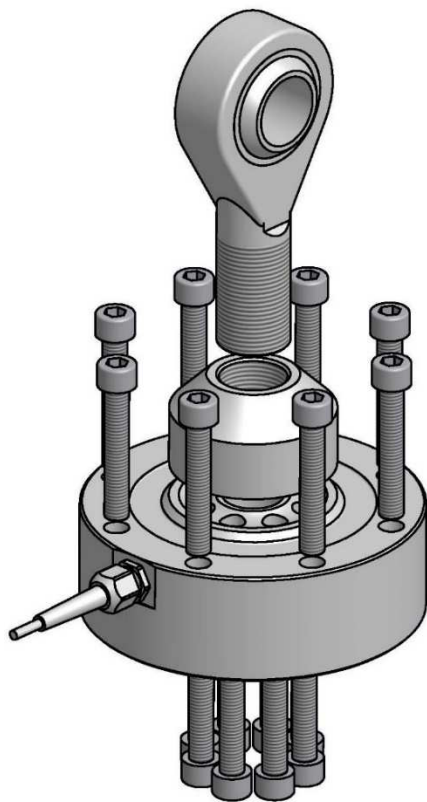
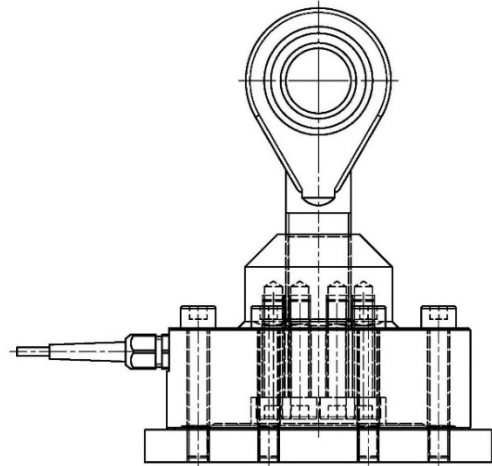
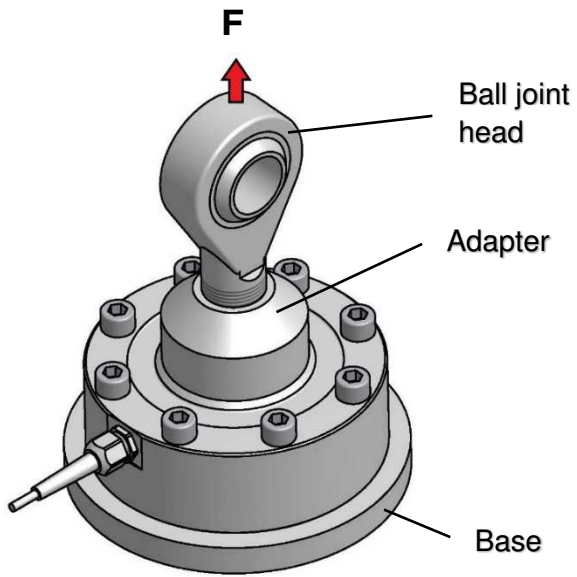
**Recommended load transmission, direction TENSION**  
**Range 1, 2, 5, 10, 20, 50 kN**



**Recommended load transmission, direction COMPRESSION,  
Range 100, 200, 500 kN**

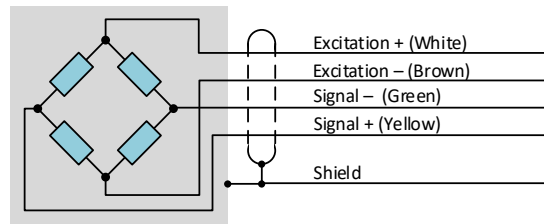


**Recommended load transmission, direction TENSION**  
**Range 100, 200, 500 kN**

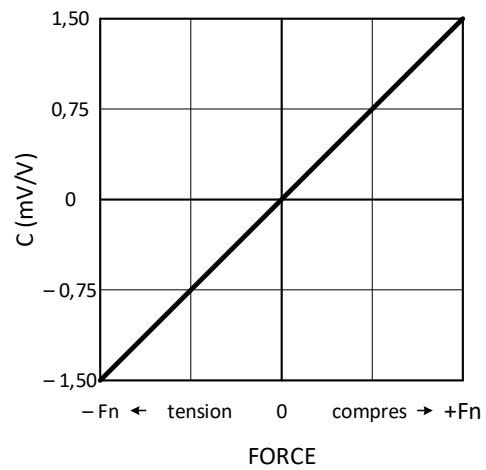




## Sensor wiring color code



## Sensor output characteristic



Sensor sensitivity – Force

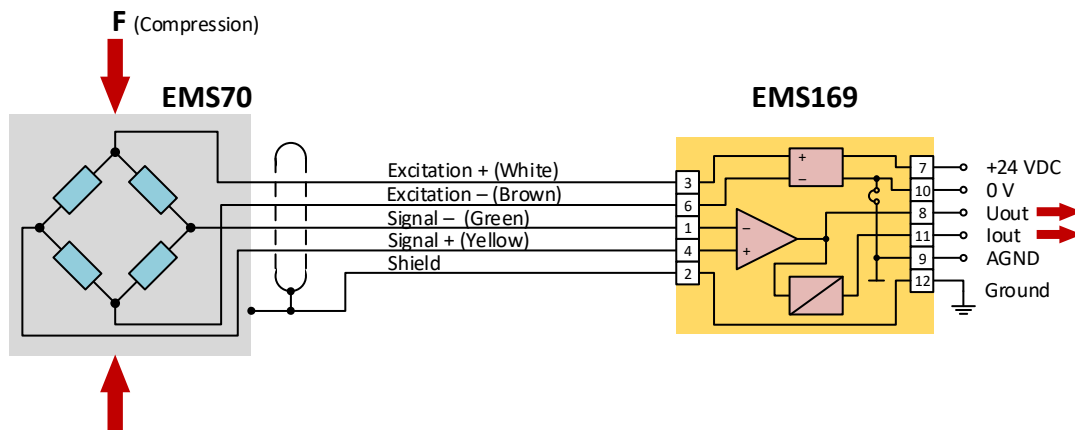
# Wiring diagram, connection example to EMS169 signal conditioner

## 1. Load compression, signal conditioner output positive (0...+10 V, 4...20 mA)

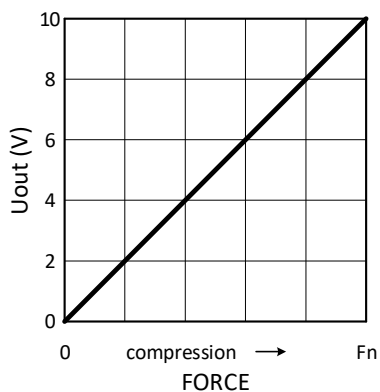
### Link configuration of signal conditioner EMS169

J2 = ON, J3 = ON, J4 = 2 – 3 (link)

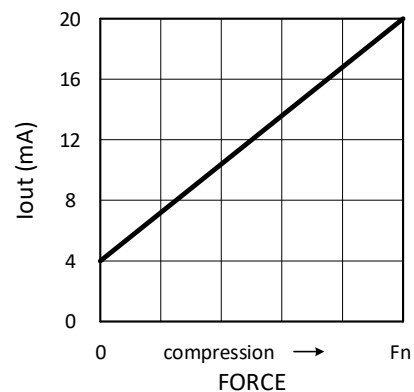
### Wiring diagram



### System output characteristic



U<sub>out</sub> vs. F



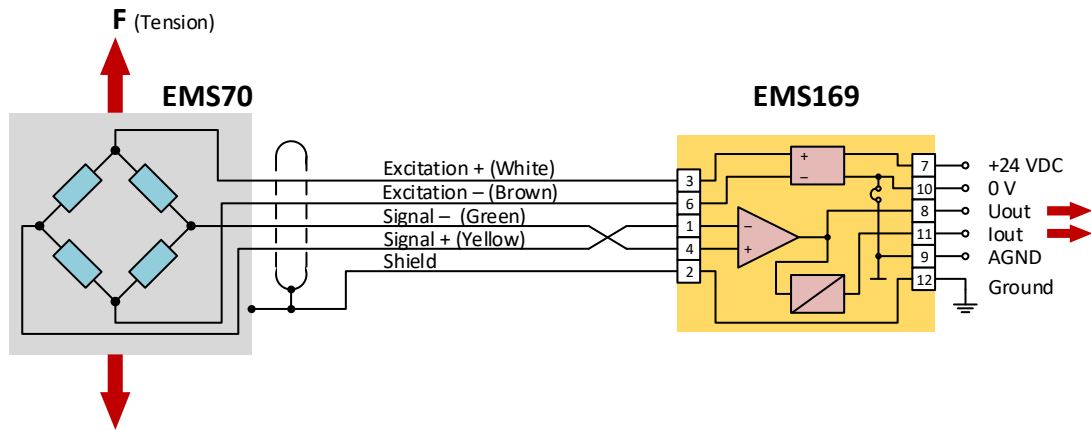
I<sub>out</sub> vs. F

## 2. Load tension, signal conditioner output positive (0...+10 V, 4...20 mA)

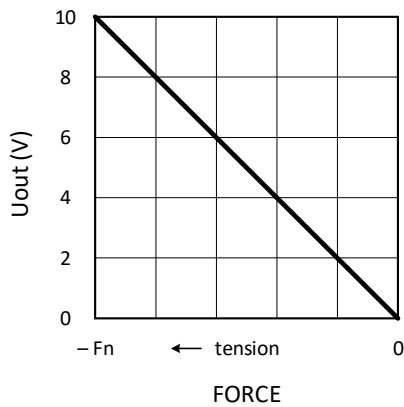
### Link configuration of signal conditioner EMS169

J2 = ON, J3 = ON, J4 = 2 – 3 (link)

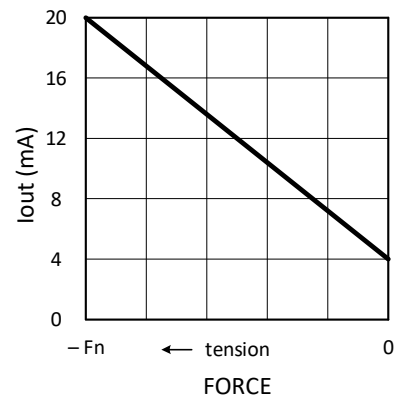
### Wiring diagram



### System output characteristic



U<sub>out</sub> vs. F



I<sub>out</sub> vs. F

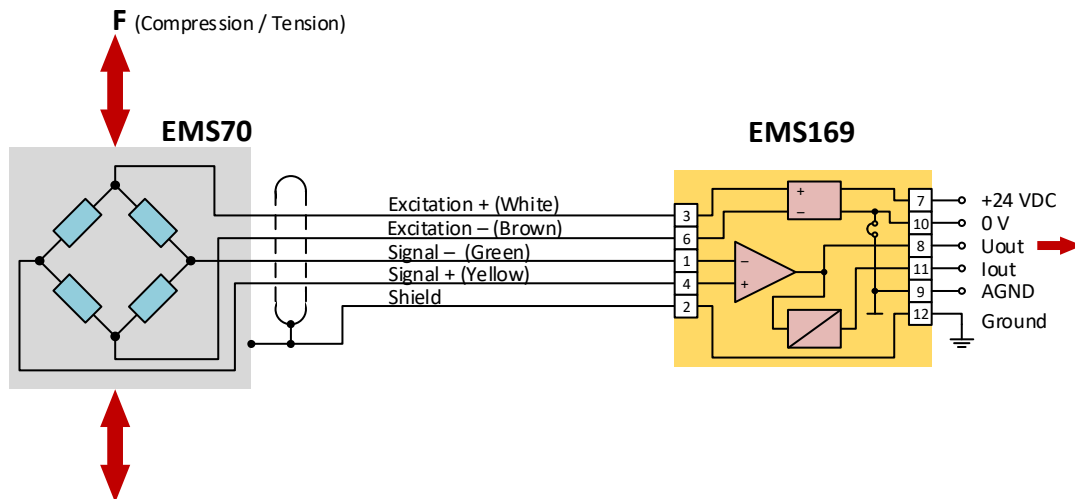
### 3. Load compression and tension, signal conditioner output bipolar (-10 V ... 0...+10 V)

Notice: current output does not work in the negative range.

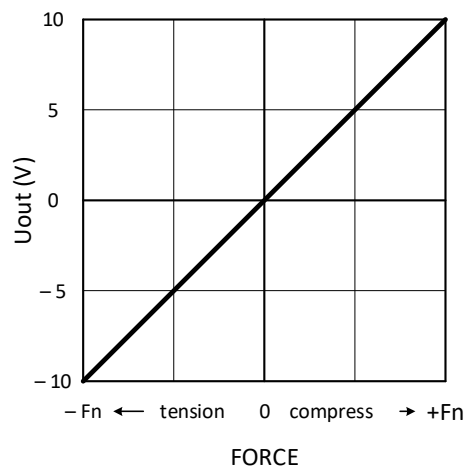
#### Link configuration of signal conditioner EMS169

J2 = ON, J3 = ON, J4 = 2 - 3 (link)

#### Wiring diagram



#### System output characteristic



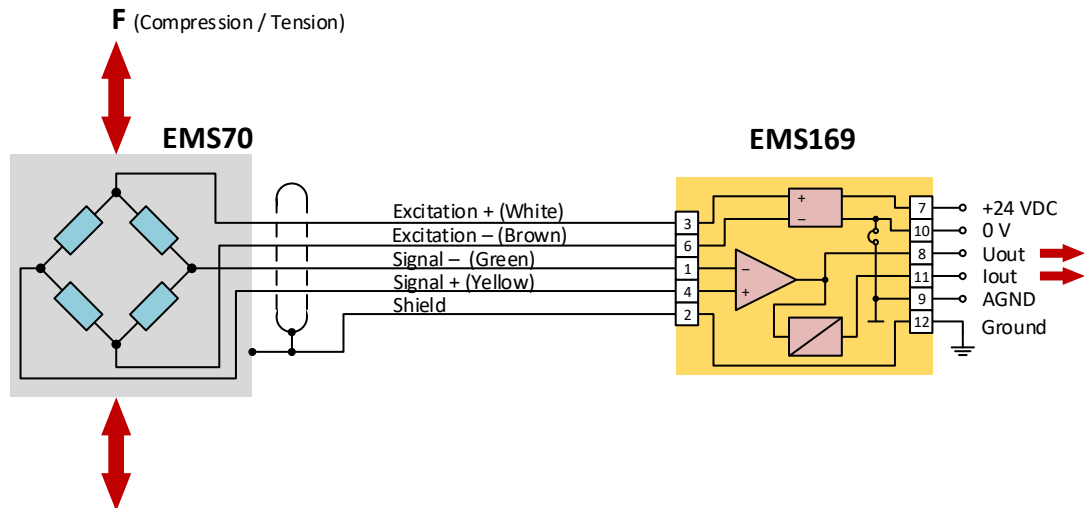
$U_{out}$  vs. F

#### 4. Load compression / tension, signal conditioner output positive (0...+10 V, 4...20 mA)

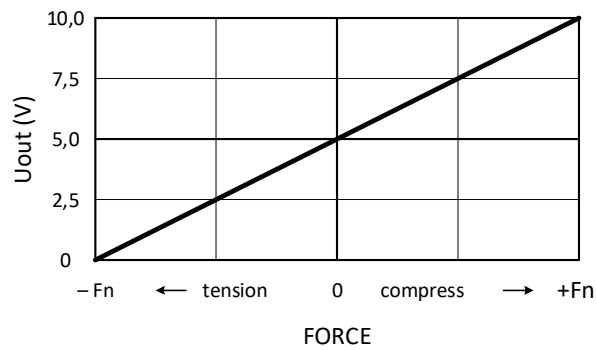
##### Link configuration of signal conditioner EMS169

J2 = ON, J3 = OFF, J4 = 1 – 2 (link)

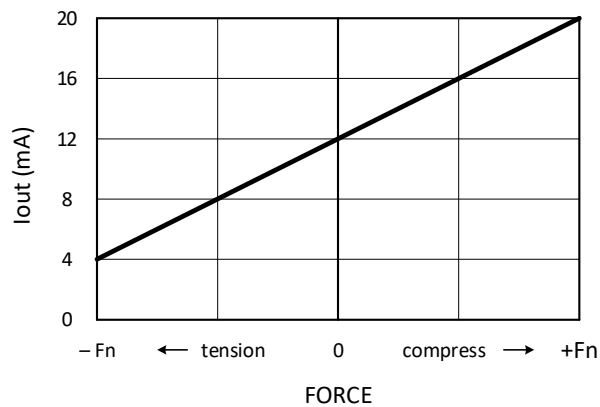
##### Wiring diagram



##### System output characteristic



$U_{out}$  vs. F



$I_{out}$  vs. F

# Parallel wiring diagram

